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ALARIS™
MEDICAL SYSTEMS

February 26, 2001

Fleet Hospital Support Office
Attention: Biomedical Department
108 Sanda Ave, Bldg Cad30
Williamsburg, VA 23185-5830

Re: ***Distribution of Service Bulletins***

Dear Sir or Madam:

As a result of our continuing efforts to improve customer service, Alaris Medical Systems will be mailing Service Bulletins on a quarterly basis. The Service Bulletins are designed to update the Technical Service Manual with the most current information for servicing and maintaining our equipment.

Enclosed you will find two important documents regarding your MedSystem III infusion pumps:

1. **Service Bulletin 471**. This Service Bulletin provides Biomedical Technicians information pertaining to drive module assemblies and motor kits having a motor date code of 448.

If maintenance of your MedSystem III infusion pump is performed by an outside facility, please forward a copy of the enclosed information to that facility.

You should only be receiving Service Bulletins for the specific model of instrument or instruments at your facility. If you have any questions or require additional information please contact **Alaris Medical Systems Technical Support** at **800-854-7128 x6003.**

Alaris Medical Systems recognizes the need for technical personnel to be updated with current information and hopes that your facility will benefit from this program.

Sincerely

Rodney A. Hasler

Rodney A. Hasler
Sr. Manager of Product Support
Alaris Medical Systems

Enclosures

OPTIONAL FORM 99 (7-90)

FAX TRANSMITTAL # of pages ► 6

To MR. ROBBINS	From HMC ACUNA
Dept./Agency DSCP	Phone # DSN 953-7522
Fax (215) 737-4113	Fax # 953-7558

NSN 7540-01-317-7368 5099-101 GENERAL SERVICES ADMINISTRATION

ALARIS® MEDICAL SYSTEMS

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Service Bulletin 471

P/N 146703-000A

Service Bulletins are supplements to ALARIS Medical Technical Service/Maintenance Manuals.
For a complete list of all ALARIS Medical Service Bulletins, refer to: www.alarismed.com/bulletins.htm

Model Affected: MedSystem III® Multi-Channel Infusion Pump - 286X
Date: December 2000
Subject: Drive Module Assembly Motor with Date Code 448

Purpose

The purpose of this bulletin is to provide Biomedical Technicians information pertaining to drive module assemblies and motor kits having a motor date code of 448, in Models 2860, 2863, 2865 and 2866. This bulletin does **not** require immediate action by the biomedical technician and should be incorporated during normal servicing of the instrument.

Explanation

Instruments, drive module assemblies and motor kits manufactured during the period of November 1998 to May 2000 may have a drive module assembly motor with date code 448. Drive module assemblies and motor kits having date code 448 may be subject to premature wear of the motor commutator. Wear in the commutator results in increased current draw from the motor. The Model 286X uses the motor current as an indicator of FSOD (Fluid-Side Occlusion Detection). The instrument may exhibit nuisance alarms and errors related to the drive mechanism, as indicated below.

- nuisance FSOD alarms
- nuisance Cassette Jammed alarms
- pump motion hindered errors: 277, 282, 283
- motion sensor errors: 259, 273
- watchdog motor errors: 17, 39, 56
- not performing, or completing, Fluid-Side Occlusion calibration

NOTE: These nuisance alarms and errors may also be caused by a faulty or misinstalled cassette, a dirty drive mechanism, an improperly calibrated channel and/or other failures in the drive mechanism.

Parts Affected:

Motor Kit (*P/N 2860760*)
Drive Module Kit (*P/N 2860745*)

Parts Ordering: Refer to Illustrated Parts Breakdown chapter of the Technical Service/Maintenance Manual
Technical Inquiries: 1-800-854-7128 Ext. 6003, 1-858-458-6003, FAX 1-858-458-7507

References

MedSystem III® Technical Service Manual (*identified as P/N 139981; ordered as P/N 2863012*)
Drive Module Assembly Installation Instructions (*P/N 141778, or later*)
Service Bulletin 404A, Level of Testing Guidelines (*P/N 141592, or later*)
Service Bulletin 394A, Cleaning procedure (*P/N 141942, or later*)

Parts and Tools Required

- Drive Module Kit; P/N 2860745*

  The kit consists of a drive module assembly, hardware required as part of a potential modification and installation instructions.

* This is in addition to parts, tools, and equipment referenced in the service manual.

Recommended Action

Include the following information as a supplement to the service manual, when troubleshooting a Model 2860, 2863, 2865 or 2866. (*Reference Tables 6-4 [Quick Reference Watchdog List], 6-11 [Encoder Faults], 6-12 [Drive System Errors] and 6-15 [Fluid-Side Occlusion Detector Problems] in Troubleshooting chapter of service manual.*)

1. Remove from stock all drive module assemblies and motors having a motor date code of 448 and return them to ALARIS Medical Systems®. (*Refer to step 14.*)

2. Determine whether or not this Service Bulletin applies, as follows:

   a. If a label having "SB-471" typed/written on it is present (located below the DRC label or the Audio/Connector PCBA), the update has already been performed. Complete the troubleshooting process per the guidelines provided in the service manual and applicable service bulletins.

   b. If the instrument has a serial number above 3531758, this Service Bulletin **does not** apply; complete the troubleshooting process per the guidelines provided in the service manual and applicable service bulletins.

   c. If the instrument has a serial number below 3388208 and a drive module motor has **not** been replaced between November 1998 and May 2000, this Service Bulletin **does not** apply; complete the troubleshooting process per the guidelines provided in the service manual and applicable service bulletins.

   d. If the instrument **does not** fall within the guidelines identified in the above steps, perform the following steps as part of the troubleshooting process.

3. Remove the lower housing and check to see if the pumping mechanisms are clean. If they are clean, proceed to step 7; otherwise, continue with the next step.

4. Clean the pumping mechanisms. (*Reference current version of Service Bulletin 394.*)

Recommended Action (Continued)

5. Perform a full calibration using the appropriate Field Maintenance Software If the instrument fails FSOD calibration, proceed to step 8; otherwise, continue with the next step.

6. Perform the following tests: (*Reference System Functional Tests chapter of service manual.*)

   Power Tests
   Cassette and Sensor Test
   Patient-Side Occlusion Detector Test
   Fluid-Side Occlusion Detector Test
   Air-in-Line Detector Test
   Volume Accuracy Test

   a. If the instrument passes all tests without any of the error codes or nuisance alarms listed above, under "Explanation", this Service Bulletin does not apply. Complete the troubleshooting process per the guidelines provided in the service manual and applicable service bulletins.

   b. If the instrument exhibits any of the error codes or nuisance alarms listed above, under "Explanation", proceed to step 8.

7. Download and examine the instrument alarm and event logs for the error codes and nuisance alarms listed above, under "Explanation". If the instrument has exhibited the listed error codes or nuisance alarms **repeatedly** on the same channels for **multiple** run times and dates **or** if FSOD calibration cannot be performed, continue with the following steps; otherwise, complete the troubleshooting process per the guidelines provided in the service manual and applicable service bulletins.

CAUTION

Turn the instrument off and disconnect it from AC power before disassembly. Static charges will damage instrument circuitry. Observe proper grounding techniques (use grounding strap) to prevent possible harm to static-sensitive components.

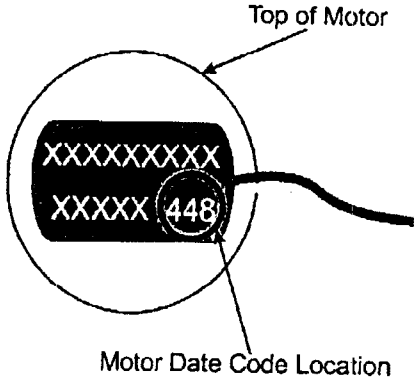
NOTE: To eliminate the mismatch of parts during the disassembly/assembly process, keep all parts that are removed from the instrument in individual bags for each channel.

8. Disassemble the instrument to allow access to the drive module assembly. (*Reference Repair chapter of service manual.*)

Recommended Action (Continued)

9. Examine the date code on the drive module assembly motor. The date code is found on the black colored cover on top of the drive module. (*See figure 1*)
   a. If the date code on the drive module assembly motor is 448, proceed to step 10.
   b. If the date code on the drive module assembly motor is **not** 448, complete the troubleshooting process per the guidelines provided in the service manual and applicable service bulletins.

Figure 1 - Date Code Location on Drive Module Assembly Motor



NOTE: In order to achieve optimum performance from the drive module, a minimum 24 hour run-in period is necessary prior to installing the drive module into the instrument. Performance of this run-in, prior to installation, is necessary to assure proper calibration of the instrument's Fluid-Side Occlusion Detection (FSOD) circuit. The run-in procedure is provided in the installation instructions, which are included as part of the drive module replacement kit.

10. Replace the drive module assembly using the installation instructions provided as part of the drive module assembly replacement kit.

    NOTE: Before replacing the drive module assembly:

    - Verify that the replacement assembly does **not** have a motor with date code 448.
    - Ensure proper lubrication is applied to the cams of the replacement assembly. (*Reference Drive Module Assembly Repair section, 7.3.5; Reassembly step, c.2 - in Repair chapter of service manual.*)

Recommended Action (Continued)

11. After replacing the drive module assembly and prior to reassembling the instrument, perform the following: (*Reference Mechanical Subsystems section in Repair chapter of service manual.*)
    a. Verify proper pump latch height. (*Reference Pump Latch Height Adjustment section, 7.3.2.*)
    b. Verify proper valve actuator heights. (*Reference Valve Actuator Height Verification section, 7.3.6.*)
12. Complete the servicing process and test per the current testing requirements. (*Reference current version of Service Bulletin 404, Level of Testing Guidelines.*)
13. Type, or clearly write using indelible ink, "SB-471" on a blank label and apply the label to the main housing just below the DRC label or the Audio/Connector PCBA.
14. Contact ALARIS Medical Systems® to set up the return of all drive module assemblies and motors having a motor date code of 448.

USA:	Customer Service (800) 482-4822
Canada:	Technical Service (800) 908-9918
International:	QA Assistant 44-1256-38-83-13